

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of the Claims

1. (Currently Amended) A ~~DNA vaccine~~ plasmid mixture comprising:
 - a first plasmid ~~consisting essentially of~~ containing a DNA fragment encoding a structural protein composed of core, E1 and E2 proteins of hepatitis C virus, in which 35-40 amino acids are eliminated from the N-terminal region of the original core protein;
 - a second plasmid ~~consisting essentially of~~ containing a DNA fragment encoding a non-structural protein of hepatitis of hepatitis C virus composed of NS3 and NS4 of hepatitis C virus; and
 - a third plasmid containing ~~consisting essentially of~~ a DNA fragment encoding NS5 of hepatitis C virus,wherein the size of the DNA fragments contained in the first, second and third plasmids ranges from 2 to 6 kb.
2. (Currently Amended) The ~~DNA vaccine~~ plasmid mixture as set forth in claim 1, wherein the size of the DNA fragments contained in the first, second and third plasmids ranges from 2 to 4 kb.
3. (Canceled)
4. (Canceled)
5. (Currently Amended) The ~~DNA vaccine~~ plasmid mixture as set forth in claim 1, wherein the first plasmid contains a DNA fragment encoding a core protein in which 40 amino acids are eliminated from the N-terminal region of the original core protein.
6. (Currently Amended) The ~~DNA vaccine~~ plasmid mixture as set forth in claim 1, wherein the encoded E2 protein contains a transmembrane domain of an E2 protein.

7. (Currently Amended) The ~~DNA-vaccine~~ plasmid mixture as set forth in claim 1, wherein the first plasmid contains a base sequence represented by SEQ ID No 50.
8. (Currently Amended) The ~~DNA-vaccine~~ plasmid mixture as set forth in claim 7, wherein the first plasmid is pGX10 gDsΔST (Accession No: KCCM 10415).
9. (Currently Amended) The ~~DNA-vaccine~~ plasmid mixture as set forth in claim 1, wherein the second plasmid contains a base sequence represented by SEQ ID No 51.
10. (Currently Amended) The ~~DNA-vaccine~~ plasmid mixture as set forth in claim 9, wherein the second plasmid is pGX10 NS34 (Accession No: KCCM 10417).
11. (Currently Amended) The ~~DNA-vaccine~~ plasmid mixture as set forth in claim 1, wherein the third plasmid contains a base sequence represented by SEQ ID No 52.
12. (Currently Amended) The ~~DNA-vaccine~~ plasmid mixture as set forth in claim 11, wherein the third plasmid is pGX10 NS5 (Accession No: KCCM 10416).
13. (Currently Amended) The ~~DNA-vaccine~~ plasmid mixture as set forth in claim 1, wherein the first plasmid contains a base sequence represented by SEQ ID No 50, the second plasmid contains a base sequence represented by SEQ ID No 51, and the third plasmid contains a base sequence represented by SEQ ID No 52.
14. (Currently Amended) The ~~DNA-vaccine~~ plasmid mixture as set forth in claim 13, wherein the first plasmid is pGX10 gDs ST (Accession No: KCCM 10415), the second plasmid is pGX10 NS34 (Accession No: KCCM 10417), and the third plasmid is pGX10 NS5 (Accession No: KCCM 10416).
15. (Currently Amended) The ~~DNA-vaccine~~ plasmid mixture as set forth in claim 14, further comprising the pGX10 hIL-12m.

16. (Currently Amended) A recombinant adenovirus ~~vaccine~~ mixture comprising:
a first adenovirus ~~consisting essentially of~~ containing a DNA fragment encoding a structural protein composed of core, E1 and E2 proteins of hepatitis C virus, in which 35-40 amino acids are eliminated from N-terminal of the original core protein;
a second adenovirus ~~consisting essentially of~~ containing a DNA fragment encoding a non-structural protein composed of NS3 and NS4 of hepatitis C virus; and
a third adenovirus ~~consisting essentially of~~ containing a DNA fragment encoding NS5 of hepatitis C virus,
wherein the size of the DNA fragments contained in the first, second and third adenoviruses ranges from 2 to 6 kb.
17. (Currently Amended) The recombinant adenovirus ~~vaccine~~ mixture as set forth in claim 16, wherein the size of the DNA fragment contained in the first, second and third adenoviruses ranges from 2 to 4 kb.
18. (Canceled)
19. (Canceled)
20. (Currently Amended) The recombinant adenovirus ~~vaccine~~ mixture as set forth in claim 16, wherein the first adenovirus contains a DNA fragment encoding a core protein in which 40 amino acids are eliminated from N-terminal of the original core protein.
21. (Currently Amended) The recombinant adenovirus ~~vaccine~~ mixture as set forth in claim 16, wherein the E2 protein contains a transmembrane domain of an E2 protein.
22. (Currently Amended) The recombinant adenovirus ~~vaccine~~ mixture as set forth in claim 16, wherein the first adenovirus contains a base sequence represented by SEQ. ID. No 50.
23. (Currently Amended) The recombinant adenovirus ~~vaccine~~ mixture as set forth in claim 22, wherein the first adenovirus is rAd gDsΔST (Accession No: KCCM 10418).

24. (Currently Amended) The recombinant adenovirus ~~vaccine~~ mixture as set forth in claim 16, wherein the second adenovirus contains a base sequence represented by SEQ. ID. No 54.
25. (Currently Amended) The recombinant adenovirus ~~vaccine~~ mixture as set forth in claim 24, wherein the second adenovirus is rAd gDs NS34 (Accession No: KCCM 10420).
26. (Currently Amended) The recombinant adenovirus ~~vaccine~~ mixture as set forth in claim 16, wherein the third adenovirus contains a base sequence represented by SEQ. ID. No 52.
27. (Currently Amended) The recombinant adenovirus ~~vaccine~~ mixture as set forth in claim 26, wherein the third adenovirus is rAd NS5 (Accession No: KCCM 10419).
28. (Currently Amended) The recombinant adenovirus ~~vaccine~~ mixture as set forth in claim 16, wherein the first adenovirus contains a base sequence represented by SEQ. ID. No 50, the second adenovirus contains a base sequence represented by SEQ. ID. No 54, and the third adenovirus contains a base sequence represented by SEQ. ID. No 52.
29. (Currently Amended) The recombinant adenovirus ~~vaccine~~ mixture as set forth in claim 28, wherein the first adenovirus is rAd gDs Δ ST (Accession No: KCCM 10418), the second adenovirus is rAd gDs NS34 (Accession No: KCCM 10420), and the third adenovirus is rAd NS5 (Accession No: KCCM 10419).
30. (Withdrawn/Currently Amended) A method of enhancing protective immunity to hepatitis C virus comprising:
- priming with the ~~DNA-vaccine plasmid mixture~~ of claim 1;
 - boosting with a ~~recombinant adenovirus vaccine, wherein the mixture of recombinant adenovirus vaccine that~~ comprises:
 - a first adenovirus ~~consisting essentially of containing~~ a DNA fragment encoding a structural protein composed of core, E1 and E2 of hepatitis C virus, in which 35-40 amino acids are eliminated from N-terminal of the original core protein;

a second adenovirus ~~consisting essentially of~~ containing a DNA fragment encoding a non-structural protein composed of NS3 and NS4 of hepatitis C virus; and
a third adenovirus ~~consisting essentially of~~ containing a DNA fragment encoding NS5 of hepatitis C virus,
wherein the size of the DNA fragments contained in the first, second and third adenoviruses ranges from 2 to 6 kb.

31. (Withdrawn/Currently Amended) The method as set forth in claim 30, wherein the priming frequency of the ~~DNA vaccine~~ plasmid mixture is 4-5.

32. (Withdrawn/Currently Amended) The method as set forth in claim 31, wherein the priming frequency of the ~~DNA vaccine~~ plasmid mixture is 3.

33. (Withdrawn/Currently Amended) The method as set forth in claim 30, wherein boosting with the recombinant adenovirus ~~vaccine~~ mixture is conducted once after priming with the ~~DNA vaccine~~ plasmid mixture three times,

wherein the first adenovirus contains a base sequence represented by SEQ. ID. No 50, the second adenovirus contains a base sequence represented by SEQ. ID. No 54, and the third adenovirus contains a base sequence represented by SEQ. ID. No 52; and

wherein the first plasmid of the DNA vaccine contains a base sequence represented by SEQ ID No 50, the second plasmid of the DNA vaccine contains a base sequence represented by SEQ ID No 51, and the third plasmid of the DNA vaccine contains a base sequence represented by SEQ ID No 52.

34. (Withdrawn/Currently Amended) The method as set forth in claim 30, wherein CD4⁺ Th1 immune response is increased by boosting with the recombinant adenovirus ~~vaccine~~ mixture after priming with the ~~DNA vaccine~~ plasmid mixture.

35. (Withdrawn/Currently Amended) The method as set forth in claim ~~[[30]]~~ 34, wherein CD4⁺ Th1 immune response is increased by boosting with the recombinant adenovirus ~~vaccine~~ mixture once after priming with the ~~DNA vaccine~~ plasmid mixture three times,

wherein the first adenovirus contains a base sequence represented by SEQ. ID. No 50, the second adenovirus contains a base sequence represented by SEQ. ID. No 54, and the third adenovirus contains a base sequence represented by SEQ. ID. No 52; and

wherein the first plasmid of the DNA vaccine contains a base sequence represented by SEQ ID No 50, the second plasmid of the DNA vaccine contains a base sequence represented by SEQ ID No 51, and the third plasmid of the DNA vaccine contains a base sequence represented by SEQ ID No 52.

36. (Cancelled)

37. (Cancelled)

38. (Currently Amended) ~~A DNA vaccine~~ The plasmid mixture of claim 1, comprising:

~~a first plasmid consisting essentially of a DNA fragment encoding a structural protein composed of core, E1 and E2 proteins of hepatitis C virus;~~

~~a second plasmid consisting essentially of a DNA fragment encoding a non-structural protein composed of NS3 and NS4 of hepatitis C virus; and~~

~~a third plasmid consisting essentially a DNA fragment encoding NS5 of hepatitis C virus;~~

~~wherein the size of the DNA fragments contained in the first, second and third plasmids ranges from 2 to 6 kb; and~~

~~wherein the DNA vaccine~~ plasmid mixture enhances cytotoxic T lymphocyte response in a person immunized with the DNA vaccine.

39. (Currently Amended) ~~[[A]]~~ The recombinant adenovirus vaccine mixture of claim 16, comprising:

~~a first adenovirus consisting essentially of a DNA fragment encoding a structural protein composed of core, E1 and E2 proteins of hepatitis C virus;~~

~~a second adenovirus consisting essentially of a DNA fragment encoding a non-structural protein composed of NS3 and NS4 of hepatitis C virus; and~~

~~a third adenovirus consisting essentially of a DNA fragment encoding NS5 of hepatitis C virus,~~

~~wherein the size of the DNA fragments contained in the first, second and third adenoviruses ranges from 2 to 6 kb; and~~

~~wherein the recombinant adenovirus vaccine mixture enhances cytotoxic T lymphocyte response in a person immunized with the recombinant adenovirus vaccine.~~

40. (Withdrawn/Currently Amended) The method of enhancing protective immunity of claim 30, wherein the DNA vaccine plasmid mixture and the recombinant adenovirus mixture enhance cytotoxic T lymphocyte response in a person immunized with the DNA vaccine and the recombinant adenovirus vaccine.